

A NEW VARIETY OF *PENSTEMON FREMONTII*  
(SCROPHULARIACEAE) FROM COLORADO

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ABSTRACT

*Penstemon fremontii* var. *glabrescens*, a new variety from western Colorado, is described and illustrated. The var. *glabrescens* has glabrous or glabrate leaves and narrow deciduous basal leaves unlike the usually pubescent and mostly persistent basal leaves of var. *fremontii*. Habitats are likewise different and var. *glabrescens* is found only along the southern edge of the range of var. *fremontii*.

While conducting a threatened and endangered species inventory in Garfield County, Colorado, we encountered a *Penstemon* that appeared to be a minor variant of *P. fremontii* Torrey & A. Gray. We later found similar material in the Rocky Mountain Herbarium (RM) from an adjacent county. The habitats were identical and the difference from typical *P. fremontii* was the same.

***Penstemon fremontii* T. & G. var. *glabrescens* Dorn & Lichvar, var. nov.** (Fig. 1)—TYPE: USA, Colorado, Garfield Co.: T7S R100W sect. 24 W $\frac{1}{2}$  NW $\frac{1}{4}$  NW $\frac{1}{4}$ , ca. 30 km SE of Douglas Pass, 2440 m, shale slope in mountain brush, 7 Jul 1987, *Dorn 4656* (holotype, RM; isotypes, to be distributed).

Differt a var. *fremontii* foliis, praeter interdum margines et costam, glabris vel glabratis.

Perennial from creeping rootstocks. Stems 1.5–3 dm long, short-pubescent to base or nearly so. Leaves opposite, the basal oblanceolate or obovate and sometimes deciduous, transitional to the lanceolate or linear-lanceolate upper leaves, (1–)2–7 cm long, 2–12 mm wide, glabrous, or short-pubescent on midrib and margins, or sometimes the lower blades sparsely pubescent. Inflorescence short-pubescent to glabrate, not glandular. Sepals glabrous, ovate and acuminate, with narrow erose-scarious margins, 3–5 mm long. Corolla blue, 15–22 mm long, the lobes (2–)3–5 mm long, glabrous. Anthers pubescent, 1–1.5 mm long, indehiscent at base, mostly bluish with pale suture margins. Staminode bearded with yellow hairs near tip. Capsules 7–9 mm long.



FIG. 1. *Penstemon fremontii* var. *glabrescens*. Circle shows close-up of stem pubescence.

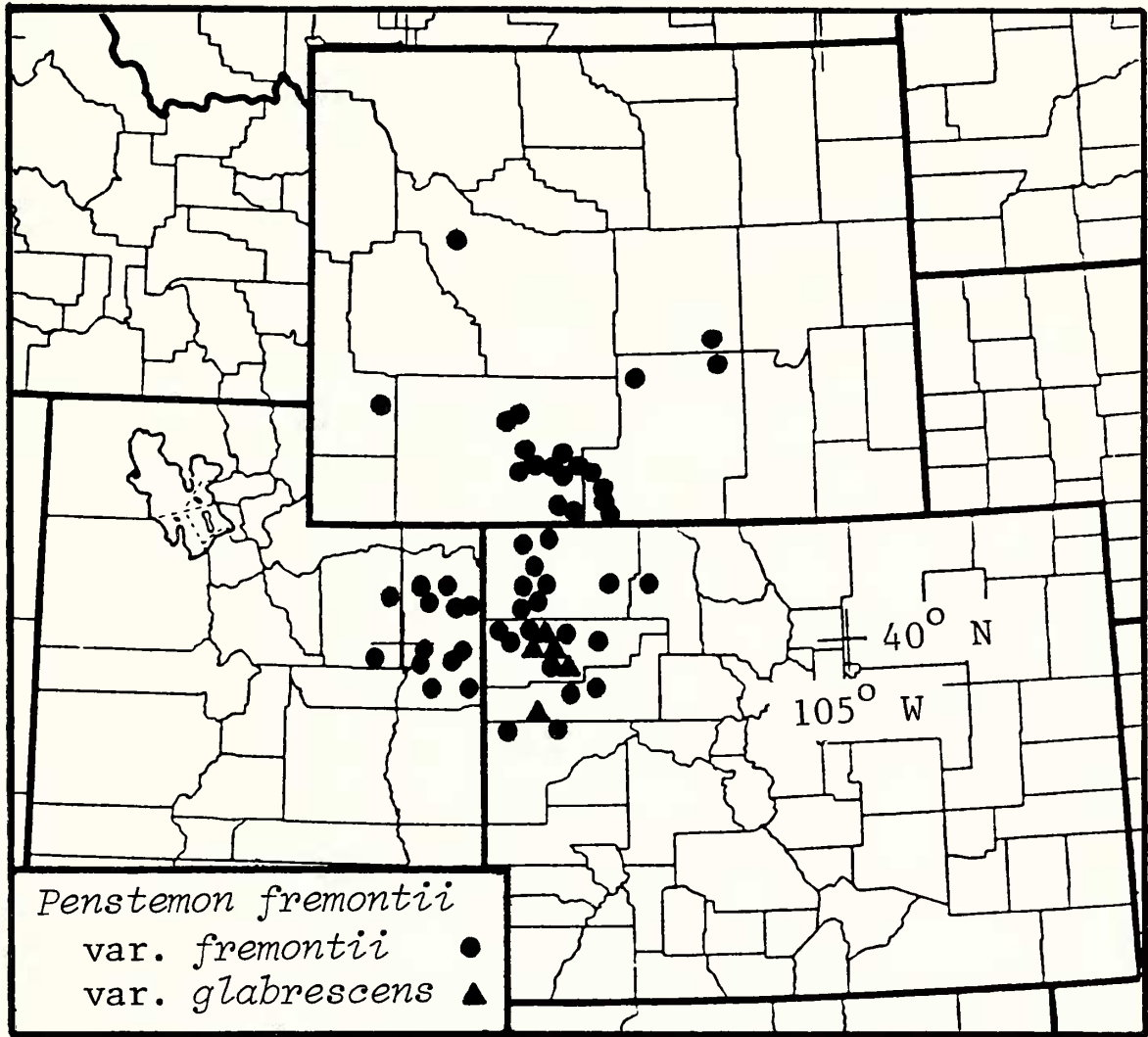


FIG. 2. Colorado, Utah, Wyoming, and parts of adjacent states showing collection locations of *Penstemon fremontii* var. *fremontii* (circles) and var. *glabrescens* (triangles) based on specimens at COLO, CS, and RM. One symbol may represent more than one collection.

PARATYPES: USA, Colorado, Garfield Co.: T8S R99W sect. 6 NE $\frac{1}{4}$  SW $\frac{1}{4}$ , 2500 m, shale slope, 8 Jul 1987, *Lichvar* 7339 (RM). Rio Blanco Co.: Fawn Creek Road, Piceance Basin, 1950 m, 6 Jul 1978, *Peterson et al.* 1178b (CS); T2N R98W sect. 17 SE $\frac{1}{4}$  NW $\frac{1}{4}$  NW $\frac{1}{4}$ , 1860 m, 10 Jun 1982, *Baker and Nauman* 82-184 (CS); T3S R95W sect. 11 NE $\frac{1}{4}$ , 2135 m, 2 Jul 1982, *Kelley and Riefler* 82-37 (CS); along Piceance Ck., 2.1 km N of Rock School, 1885 m, 20 Jun 1983, *Peterson and Rollins* 83-215 (CS, RM); T2S R95W sect. 26 NE $\frac{1}{4}$  SW $\frac{1}{4}$ , 2195 m, 3 Jun 1986, *O'Kane* 2408 (COLO, RM); Piceance Creek Valley, 16 km upstream from Rock School, 18 Jun 1988, *Weber* 17922 (COLO).

In var. *fremontii* at least the lower leaves are almost always distinctly short-hairy, but occasional individuals have leaves with a tendency toward glabrescence (e.g., *Neese* 14102 [RM]), the basal leaves tend to be broad and persistent, and the corolla lobes are often short and narrow. In var. *glabrescens* most of the leaves are

TABLE 1. SELECTED CHARACTERISTICS FOR *PENSTEMON FREMONTII* AND RELATED TAXA.

Species or variety	Lower stems hairy	Leaf width (mm)	Leaves hairy	Inflorescence	Calyx length (mm)	Corolla length (mm)	Anther length (mm)
<i>P. fremontii</i>							
var. <i>fremontii</i>	yes	2-18(-27)	yes	pubescent	2.5-6.5	(12-)14-23(-28)	(1-)1.2-1.5(-1.8)
var. <i>glabrescens</i>	yes	2-12	midrib and margin	pubescent	2-5	14-22	1-1.5
<i>P. gibbensii</i>	yes (no)	2-7(-8)	yes (no)	glandular	3.5-7(-8)	(15-)16-18(-20)	1-1.3
<i>P. saxosorum</i>	no	3-19	no	glabrous	3.5-8	17-25(-30)	1-1.5
<i>P. scariosus</i>	no	2-15(-23)	no	glandular (glabrous)	(3-)4-9(-13)	(15-)16-30(-33)	(1.3-)1.5-2.2(-2.6)

glabrous or glabrate except sometimes for the margins and midvein, the basal leaves tend to be narrow and deciduous, and the corolla lobes are often long and wide.

Variety *fremontii* is typically found associated with *Artemisia tridentata* on relatively well developed soils. Variety *glabrescens* is found on partly barren, south facing slopes of Green River shale with *Amelanchier*, *Chrysothamnus*, and *Holodiscus* on poorly developed soils. The main elevational range of the two varieties is nearly the same, about 1770 to 2500 m, but var. *fremontii* has been found down to 1525 m. The habitats are strikingly different, however, and var. *glabrescens* is found only at the southernmost edge of the range of var. *fremontii* (Fig. 2).

Variety *glabrescens* also resembles *P. gibbensii* Dorn but lacks the glands in the inflorescence and tends to have broader leaves. *Penstemon scariosus* Pennell is also similar but has glabrous stems below the inflorescence and the hairs on the anthers are generally longer and more copious and the anther sacs are longer. *Penstemon saxosorum* Pennell likewise has glabrous stems below the inflorescence. A comparison of selected features for these taxa is presented in Table 1.

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